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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/482,859 01/14/00 HAGIWARA

H 511.33114VV4

020457 IM52/0425  
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EXAMINER

ART UNIT	PAPER NUMBER
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1752  
DATE MAILED:

10  
04/25/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/482,859

Applicant(s)

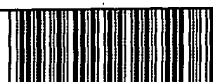
HAGIWARA ET AL

Examiner

John Chu

Art Unit

1752



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Dec 19, 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 10-14 and 20-36 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-14 and 20-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 08/299,628.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 20) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. This Office action is in response to the CPA filed December 19, 2000.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-14 and 20-36 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the addition polymerizable compound which is essential for the claimed invention to function in the desired manner upon processing.

4. Claims 10-14 and 20-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation "polymerization initiator" in line 6. There is insufficient antecedent basis for this limitation in the specification.

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*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over OHBAYASHI ET AL '391 or ALDRICH ET AL.

The claimed invention is drawn to a semiconductor device, comprising:  
a semiconductor substrate; and a polyimide film overlying the semiconductor substrate, wherein said polyimide film includes a polyimide material formed from an oxydiphthalic acid or acid anhydride thereof as a reactant.

OHBAYASHI ET AL discloses a photosensitive resin composition comprising a polyamic acid (col. 2, lines 63 - col. 6, line 21), an acryl compound having an amino group (col., 6, lines 29-44), an azide compound (col.7, 38 - col. 8, line 48) and a photoinitiator (col. 9, lines 14-20). This disclosure suggests the claimed composition used in the claimed process lacking only an explicit disclosure using a polyamic acid made by an oxydiphthalic dianhydride and a diamine.

It would have been *prima facie* obvious to one of ordinary skill in the requisite art of polyamic acid photosensitive compositions to select an oxydiphthalic dianhydride as disclosed in

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column 3, line 21 and use it in place of the benzophenone tetracarboxylic dianhydride of the examples and reasonably expect same or similar results as disclosed in the reference.

Motivation is based on the desire to have a photoresist composition that is improved in radiation sensitivity that can give good heat resistance and good edge sharpness.

ALDRICH ET AL discloses a photosensitive composition comprising a polyimide precursor (col. 6, lines 5 - col. 7, lines 48), a photoinitiator (col. 8, line 1-51) and an acryl compound (col. 9, line 20-68). ALDRICH ET AL further teaches that oxydiphthalic anhydride can be used to make the polyamic acid as disclosed in column 7, lines 26-48.

ALDRICH ET AL lacks an explicit example using a polyamic acid as claimed in an example.

It would have been *prima facie* obvious to one of ordinary skill in the art of photosensitive compositions to substitute the oxydiphthalic acid in column 3, line 21 for the biphenyl tetracarboxylic dianhydride in Example 1 in OHBAYASHI ET AL and reasonably expect same or similar results for good heat resistance and good edge sharpness.

Further it would have been *prima facie* obvious to one of ordinary skill in the art to substitute the oxydiphthalic acid in column 7, line 41 for the biphenyl tetracarboxylic dianhydride in Examples 2 or 30 of ALDRICH ET AL with the reasonable expectation of good image resolution and thermal properties.

Motivation is based on the desire to have a composition which can form patterned images with high heat resistance and good pattern image formation.

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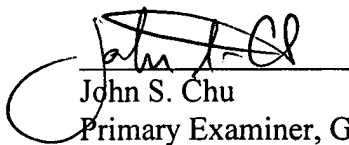
The declaration evidence has been considered, however the evidence is not of proper scope commensurate with the claimed invention. The evidence includes the presence of an addition polymerizable compound which is not recited by claim 10. Thus the claims are not seen as being commensurate in scope with the declaration evidence to overcome the rejections under 35 U.S.C. 103(a).

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. HAEHNLE ET AL, MUELLER ET AL, SIMMONS III ET AL and KAJI ET AL are cited of interest disclosing composition comprising a polyamic acid, a photoinitiator and an ethylenically unsaturated compound.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for this Group is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

  
John S. Chu  
Primary Examiner, Group 1700

J.Chu  
April 23, 2001